

ABSTRACT

This invention provides a novel acid DNase (DLAD) which is an endonuclease capable of cleaving DNA independently from
5 divalent cations, under acidic conditions, which retains its activity in acidic to even neutral pH range, and which is not inhibited by G-actin. This invention also provides a DNA encoding the enzyme, an expression vector containing the DNA, and a host cell transformed with the expression vector. Furthermore, a
10 pharmaceutical composition containing DLAD, DLAD expression vector or a host cell transformed with the expression vector as an active ingredient is provided. The pharmaceutical composition is useful as a therapeutic agent replacing DNase I for cystic fibrosis, and can provide a new approach for the prophylaxis and treatment of
15 infectious diseases.